

REMARKS

Favorable reconsideration of this application, in light of the following discussion and in view of the present amendment, is respectfully requested.

Claim 11 has been amended. Claims 1-12 are pending and under consideration.

I. Rejection under 35 U.S.C. § 112

In the Office Action, at page 2, numbered paragraph 1, claim 11 was rejected under the first and second paragraphs of 35 USC § 112 as failing to comply with the written description requirement and as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In response, claim 11 has been amended, replacing the recitation "obtaining an attitude of the tool" with the recitation "obtaining the actual tool length vector of the tool." Support for claim 11 as amended can be found in the original specification at pages 14-16, where the process for determining the actual tool length vector of the tool is disclosed. Accordingly, withdrawal of this § 112 rejection is respectfully requested.

II. Rejections under 35 U.S.C. § 102

In the Office Action, at pages 2-5, numbered paragraph 2, claims 1-2, 5-9, and 12 were rejected under 35 USC § 102(e) as being anticipated by U.S. Patent No. 6,909,571 to Coleman et al.

Coleman et al. does not discuss or suggest "means for obtaining a machine position to which the machine should actually move so that the relation between a workpiece and a tool that is found when there is no mechanical error is maintained on the basis of a reference position at which there is no mechanical error in the axis of rotation and an amount of misalignment of the actual axis of rotation from the reference position, and/or on the basis of a reference position at which there is no mechanical error in the turning center of the spindle and an amount of misalignment of the actual turning center of the spindle from the reference position of the turning center of the spindle," as recited in independent claim 1. In other words, the invention of claim 1 provides a device for maintaining a desired relationship between a *workpiece* and a machine tool by calculating and controlling the mechanical error that might exist in an axis of rotation of the machine and/or the mechanical error that might exist in the turning center of the spindle of the machine. In contrast, Coleman et al., as relied upon by the Examiner, seeks only to qualify the accuracy of a machining system as a whole and diagnose sources of errors and correct those errors. (Coleman et al., col. 1, lines 15-23). Coleman et al. does not attempt to maintain the accuracy of a machine in relation to a workpiece of the machine. Coleman et al. seeks to

qualify the accuracy of a machine only with respect to a fixed monument that is separate from that of the machine (Coleman et al., col. 5, lines 58-63; col. 6, lines 11-52). The invention of claim 1 requires no such separate, fixed monument for maintaining a desired relationship between a workpiece and a machine tool. Coleman et al. even concedes that probe checks against a monument are not capable of determining whether the holding fixture is positioning workpieces accurately (Coleman et al., col. 16, lines 35-38).

Coleman et al. does not discuss or suggest “drive control means for driving the axis of rotation and the axis of linear motion to the machine position obtained by said machine position obtaining means,” as recited in independent claim 1. In other words, the invention of claim 1 provides a means for moving the machine into the desired position established by the machine position obtaining means. In contrast, Coleman et al., as relied upon by the Examiner, is not provided with a means for driving the machine, but is directed toward a control system for manipulating the pogos of a separate holding fixture such that a workpiece can be fixed in a desired location on the separate holding fixture (Coleman et al., col. 12, lines 27-31).

Therefore, Coleman et al. does not discuss or suggest “means for obtaining a machine position to which the machine should actually move so that the relation between a workpiece and a tool that is found when there is no mechanical error is maintained on the basis of a reference position at which there is no mechanical error in the axis of rotation and an amount of misalignment of the actual axis of rotation from the reference position, and/or on the basis of a reference position at which there is no mechanical error in the turning center of the spindle and an amount of misalignment of the actual turning center of the spindle from the reference position of the turning center of the spindle” or “drive control means for driving the axis of rotation and the axis of linear motion to the machine position obtained by said machine position obtaining means,” as recited in independent claim 1, so that claim 1 patentably distinguishes over Coleman et al. Accordingly, withdrawal of this § 102(e) rejection is respectfully requested.

Coleman et al. also does not discuss or suggest “obtaining a machine position to which the machine should actually move so that the relation between a workpiece and a tool that is found when there is no mechanical error is maintained on the basis of a reference position at which there is no mechanical error in the axis of rotation and an amount of misalignment of the actual axis of rotation from the reference position, and/or on the basis of a reference position at which there is no mechanical error in the turning center of the spindle and an amount of misalignment of the actual turning center of the spindle from the reference position of the turning center of the spindle” or “moving the axis of linear motion and the axis of rotation to the machine position thus obtained,” as recited in independent claim 8. Therefore, independent claim 8 patentably distinguishes over Coleman et al. Accordingly, withdrawal of this § 102(e) rejection is

respectfully requested.

Claims 2 and 5-7 and claims 9 and 12 depend either directly or indirectly from independent claims 1 and 8, respectively, and include all the features of claims 1 and 8, plus additional features that are not discussed or suggested by the references relied upon. Therefore, claims 2, 5-7, 9, and 12 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of these § 102(e) rejections is respectfully requested.

III. Rejections under 35 U.S.C. § 103

In the Office Action, at pages 5-8, numbered paragraph 3, claims 3-4 and 10-11 were rejected under 35 USC § 103(a) as being unpatentable over U.S. Patent No. 6,909,571 to Coleman et al. in view of Bohez, "Compensating for systematic errors in 5-axis NC machining."

As discussed above, independent claims 1 and 8 patentably distinguish over Coleman et al. Claims 3-4 and claims 10-11 depend either directly or indirectly from independent claims 1 and 8, respectively, and include all the features of claims 1 and 8, plus additional features that are not discussed or suggested by the references relied upon. Therefore, claims 3-4 and 10-11 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of these § 103(a) rejections is respectfully requested.

Conclusion

Claims 1-12 are pending and under consideration.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

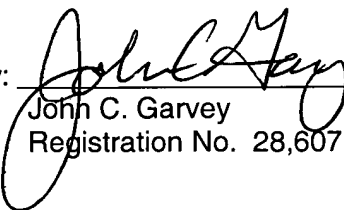
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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